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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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HOB

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/381,061 12/06/99 TODA

M FUK-59

EXAMINER

022855
RANDALL J. KNUTH P.C.
3510-A STELLHORN ROAD
FORT WAYNE IN 46815-4631

IM52/1107

BUEKER, R	
ART UNIT	PAPER NUMBER

1763
DATE MAILED:

9

11/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/381,061

Applicant(s)

TODA ET AL.

Examiner

Richard Bueker

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1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required because the originally filed specification is of such poor copy quality as to be difficult to read. The substitute specification filed must be accompanied by a statement that it contains no new matter.

The drawings are objected to because the copy quality is so poor as to make the drawings impossible to understand. See also the attached Form PTO-948. Correction is required.

Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification and drawings fail to make clear the exact nature of the claimed "group of auxiliary fine pores for suppressing vibration of the substrate body when the substrate body is rotated at high speed".

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is objected to because it is unclear if the four different groups of fine pores are separate and distinct from each other or if one group of fine pores can perform different functions. For example, pores that center and or rotate the substrate body would also be expected to float the substrate body. The claims are replete with non-idiomatic English and phrases which lack proper antecedent basis. In claim 2, for, example, the phrase "fine pores constituting the group of fine pores" is vague and indefinite because claim 1 defines four different groups of fine

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pores, and it is unclear which group of fine pores are intended to be referred to in claim 2. Also, in claim 2, line 3, the phrase "the floating apparatus" lacks proper antecedent basis. In claim 2, line 4, "the fine pores" and "the inclination" both lack proper antecedent basis. In claims 2-6, the recitation of fine pores "on a surface of the floating unit" should be changed to "in a surface of the floating unit". The portion of claim 3 starting with "assuming" is vague and indefinite. Claims 3-6 are unintelligible. The phrase "type of" in line 1 of claims 7-9 is vague and indefinite. In claim 7, line 1, and claim 8, lines 1-2, the phrase "the substrate body-floating apparatus" lacks proper antecedent basis. In claim 8, line 3, the phrase "the atmospheric pressurized . . . conditions" is vague and indefinite and lacks proper antecedent basis.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 8-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Amada (4,593,168). Amada discloses (see Fig. 1) a coating apparatus in which a semiconductor wafer to be coated is floated and rotated by a flowing gas which is blown against a surface of the wafer. The jig 3 of Fig. 1 of Amada acts as a nozzle, and is substantially the same diameter as the wafer, with a clearance of 1 to 2 mm between the nozzle and the wafer. Regarding

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the claim 8 limitation of blowing the gas against a rear surface of the substrate body, it is noted that the claim does not define which surface is the rear, and the side of Amada's wafer facing the gas flow can inherently be considered a rear surface. Regarding the recitation of an air flow, it is noted that the particular type of gas used in the claimed apparatus does not so limit the present apparatus claims.

Claim 8 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maruyama (6,001,175). Maruyama (see fig. 18 and col. 19, line 1 to col. 20, line 36) discloses a coating apparatus in which a flow of gas floats and rotates a substrate while a coating is deposited on it. Regarding the claim 8 limitation of blowing the gas against a rear surface of the substrate body, it is noted that the claim does not define which surface is the rear, and the side of Maruyama's wafer facing the gas flow can inherently be considered a rear surface. Regarding the recitation of an air flow, it is noted that the particular type of gas used in the claimed apparatus does not so limit the present apparatus claims.

Claim 8 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bhat (5,226,383). Bhat (Fig. 1) discloses a coating apparatus in which a flow of gas causes a circular disk 12 (see col. 2, lines 7-10 and 31-33) to float and rotate. While the disk 12 is used to hold a substrate to be coated within a surface recess of the disk, it is noted that the exposed surface of the disk will also inherently be coated during a coating process. Therefore, the disk/substrate combination can properly be considered to inherently be a "substrate body".

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Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhat taken in view of Nishitani (4,979,466), White (5,174,825) and Foster (5,273,588). Bhat discloses a substrate body floating and rotating apparatus for use in a CVD apparatus, but does not discuss the details of the CVD apparatus, such as the coating gas supply means. Nishitani (see Figs. 3 and 4 and col. 10, lines 31-33) and White (see Figs. 1-5) disclose CVD apparatus, in which coating gas is supplied to a substrate to be coated by means of a nozzle that has a diameter of substantially the same dimension as the substrate to be coated. Foster (see Fig. 4 and col. 12, lines 29-34) also teaches an analogous gas supply arrangement, and Foster makes clear that it is desirable to rotate the substrate during coating. It would have been prima facie obvious to one skilled in the art to utilize Bhat's substrate body floating and rotating means with a conventional gas supply means of the type taught by Nishitani, White and Foster.

Claim 7 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hiura (JP 59-215718). Regarding the claim 7 limitation of blowing the gas against a rear surface of the substrate body, it is noted that the claim does not define which surface is the rear, and the side of Hiura's wafer facing the gas flow can inherently be considered a rear surface. Regarding the recitation of an air flow, it is noted that the particular type of gas used in the claimed apparatus does not so limit the present apparatus claims.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hiura (JP 59-215718). Hiura's floating and rotating apparatus contains gas distribution holes that float the substrate,

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rotate the substrate and center the substrate. Hiura does not disclose that his substrate vibrates during rotation, and there is no other indication that his substrate vibrates, so it is reasonable and proper to assume that his gas distribution holes inherently do not cause any excessive vibration.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Aschner, who discloses a heat treating apparatus in which an optical heater is used to heat a substrate while it is floated, centered and rotated by flowing gas. There is no disclosure that the substrate of Aschner is vibrating in any excessive way, so is reasonable and proper to assume that his gas distribution holes inherently do not cause any excessive vibration. It is also noted that applicants' specification at page 2, lines 12-14, indicates that a purpose of their invention is to avoid vibration due to the presence of a rotary shaft. It is noted that Aschner's substrate rotates without a rotary shaft.

examiner should be directed to Richard Bueker whose telephone number is (703) 308-1895. The examiner can normally be reached on Monday through Friday from 9:30 AM to 5:00 PM.

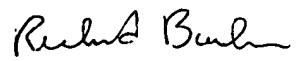
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills, can be reached on (703) 308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-5408.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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Richard Bueker
Primary Examiner
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